

foreign nations, and such order may be modified from time to time.

SEC. 2. That within the respective zones created under the authority hereof the standard time of the zone shall govern the movement of all common carriers engaged in commerce between the several States or between a State and any of the Territories of the United States, or between a State or the Territory of Alaska and any of the insular possessions of the United States or any foreign country. In all statutes, orders, rules, and regulations relating to the time of performance of any act by any officer or department of the United States, whether in the legislative, executive, or judicial branches of the Government, or relating to the time within which any rights shall accrue or determine, or within which any act shall or shall not be performed by any person subject to the jurisdiction of the United States, it shall be understood and intended that the time shall be the United States standard time of the zone within which the act is to be performed.

SEC. 3. That at two o'clock antemeridian of the last Sunday in March of each year the standard time of each zone shall be advanced one hour, and at two o'clock antemeridian of the last Sunday in October in each year the standard time of each zone shall, by the retarding of one hour, be returned to the mean astronomical time of the degree of longitude governing said zone, so that between the last Sunday in March at two o'clock antemeridian and the last Sunday in October at two o'clock antemeridian in each year the standard time in each zone shall be one hour in advance of the mean astronomical time of the degree of longitude governing each zone, respectively.¹

SEC. 4. That the standard time of the first zone shall be known and designated as United States Standard Eastern Time; that of the second zone shall be known and designated as United States Standard Central Time; that of the third zone shall be known and designated as United States Standard Mountain Time; that of the fourth zone shall be known and designated as United States Standard Pacific Time; and that of the fifth zone shall be known and designated as United States Standard Alaska Time.

SEC. 5. That all acts and parts of acts in conflict herewith are hereby repealed.

Approved, March 19, 1918.

DIAGRAMS SHOWING CONDITIONS AND EFFECTS OF THE DAYLIGHT-SAVING ACT.

By CHARLES F. MARVIN, Chief.

[Weather Bureau, Washington, Apr. 3, 1918.]

Charts XLVI-19 to XLVI-21 of this issue of the REVIEW show the hours of darkness and daylight, including twilight, for selected latitudes from 30° to 60° N., at intervals of 6°. The shaded blocks in the period of daylight show the ordinary hours of industrial labor as advanced and retarded by the operation of the daylight-saving act printed above.

The increasing number of daylight hours during the summer portion of the year for the more northern as compared with the southern latitudes, is a striking and

significant feature of the diagrams. The corresponding shortness of daylight during the northern winters is also conspicuous.

The states and countries immediately adjacent to the selected latitudes are indicated on the diagram and the greater advantage resulting from the daylight-saving act, even in the countries north of the extreme northern boundary of the United States, is quite apparent.

It is important to remember that the diagrams are drawn on the basis of *mean solar time*. Accordingly, on the diagrams the hours of labor, etc., are depicted correctly with relation to local sunrise and sunset only for places whose geographic locations fall on or close to the standard meridian governing the time for any particular zone; that is, the diagrams may be assumed to represent true conditions on the 75th, 90th, and other standard-time meridians. However, since each zone comprises a full hour of difference of time, it necessarily results that the saving of daylight effected by the act is increased over that shown in the diagram for the more western portions of the zone up to half an hour, or thereabouts, and is correspondingly reduced in the eastern portions of each zone by an amount which becomes as great as half an hour, or thereabouts.

In connection with a study of the effects graphically set out in the diagrams, and a consideration of the grave doubts surrounding the chronology and history of events resulting from the arbitrary advancement and retardation of clocks involved in any scheme of this sort, it may be well to consider whether it would not ultimately be better, in the history of mankind, to arbitrarily advance the time of each zone a fixed amount—one-half hour or possibly one hour—which would remain the same throughout the year and continuously thereafter, thus seemingly more effectually avoiding the perpetual confusion in fixing the exact time of events that is hardly separable from the alternation between summer and winter. This scheme would always give to mankind the advantages of relatively longer daylight in the afternoons.

"SUMMER TIME" AND THE BRITISH METEOROLOGICAL OFFICE.

By SIR NAPIER SHAW.

[From the Twelfth Annual Report of the Meteorological Committee for the year ended 31st March, 1917 (sixty-second year of the Meteorological Office).]

Some addition to the work of the Divisions for Forecasts and Statistics was entailed by the adoption of "Summer-time" from May 21 until the end of September, 1916. The diurnal variations of weather are controlled by the sun, and for climatological purposes the fundamental principle of meteorological work is to note the conditions day by day at the same interval before or after true noon throughout the year. Local apparent time is therefore the proper time for observers to keep for climatological purposes; allowing a certain latitude, local mean time is prescribed in the books of instructions for climatological stations and suitable allowance can be made if Greenwich time is used; *but there is no means of dealing with observations which are an hour further from or nearer to noon in summer than in winter.*¹ As regards the Daily Weather Service, strenuous and very largely successful efforts have been made during the past 50 years to get the contributing stations of all countries of the region extending from Spitsbergen to Algeria and

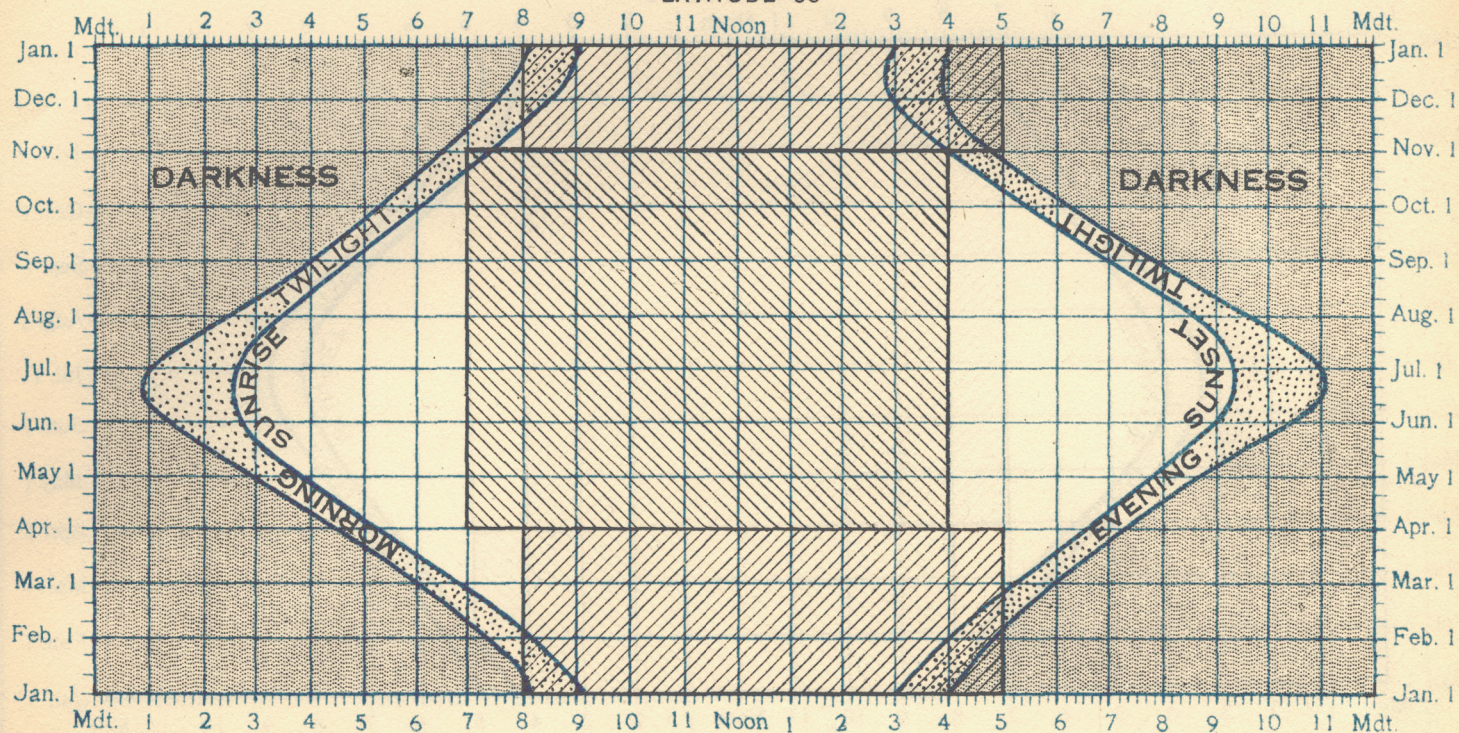
¹ The "mean astronomical time" here mentioned is understood to be the time called "mean solar time" by astronomers and meteorologists. It is determined by applying the "equation of time" to the sun's observed position.

These puzzling differences in the kinds of time are explained in "The American Ephemeris and Nautical Almanac for 1918," p. 713-714, and in Todd's "New Astronomy," Chapter VI.—C. A., jr.

¹ Italics ours.—EDITOR.

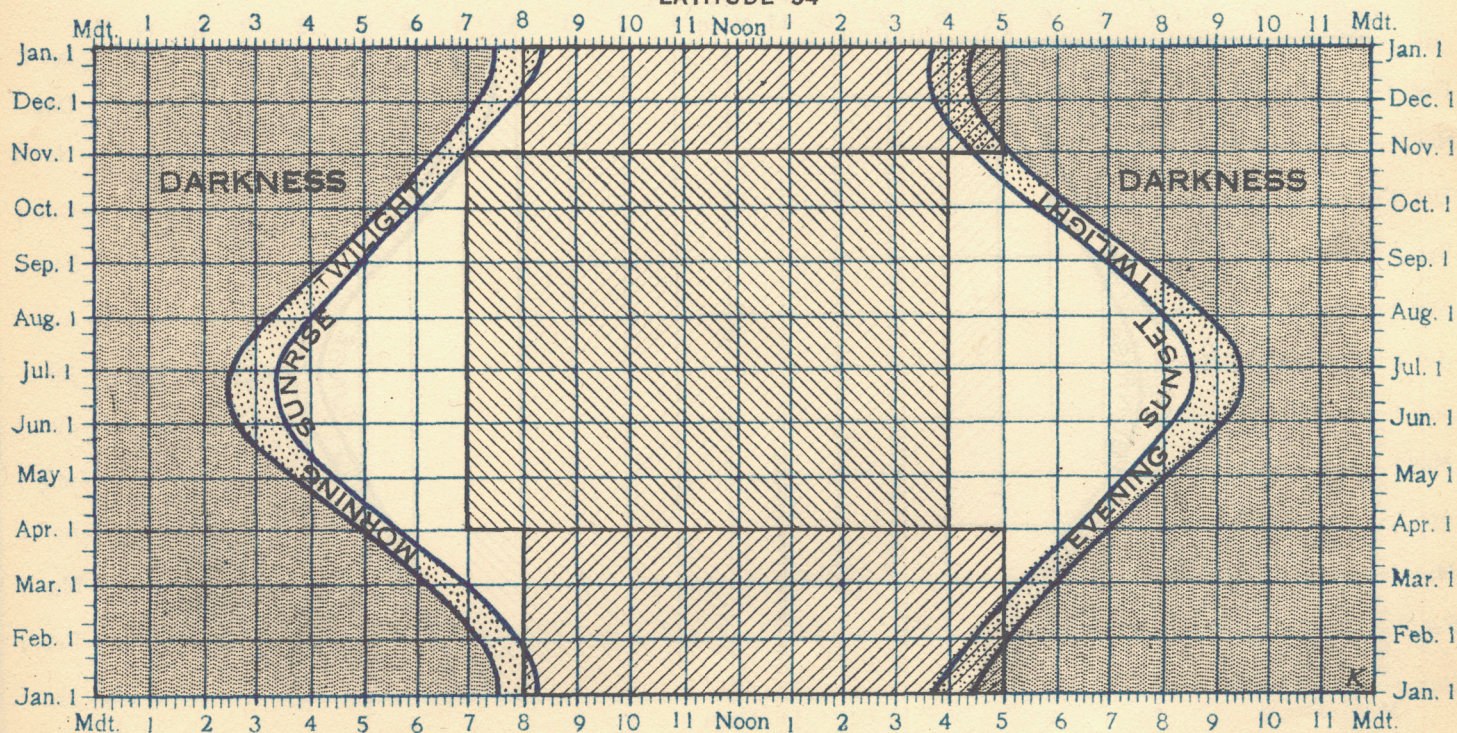
DAYLIGHT AND DARKNESS DIAGRAMS

LATITUDE 60°



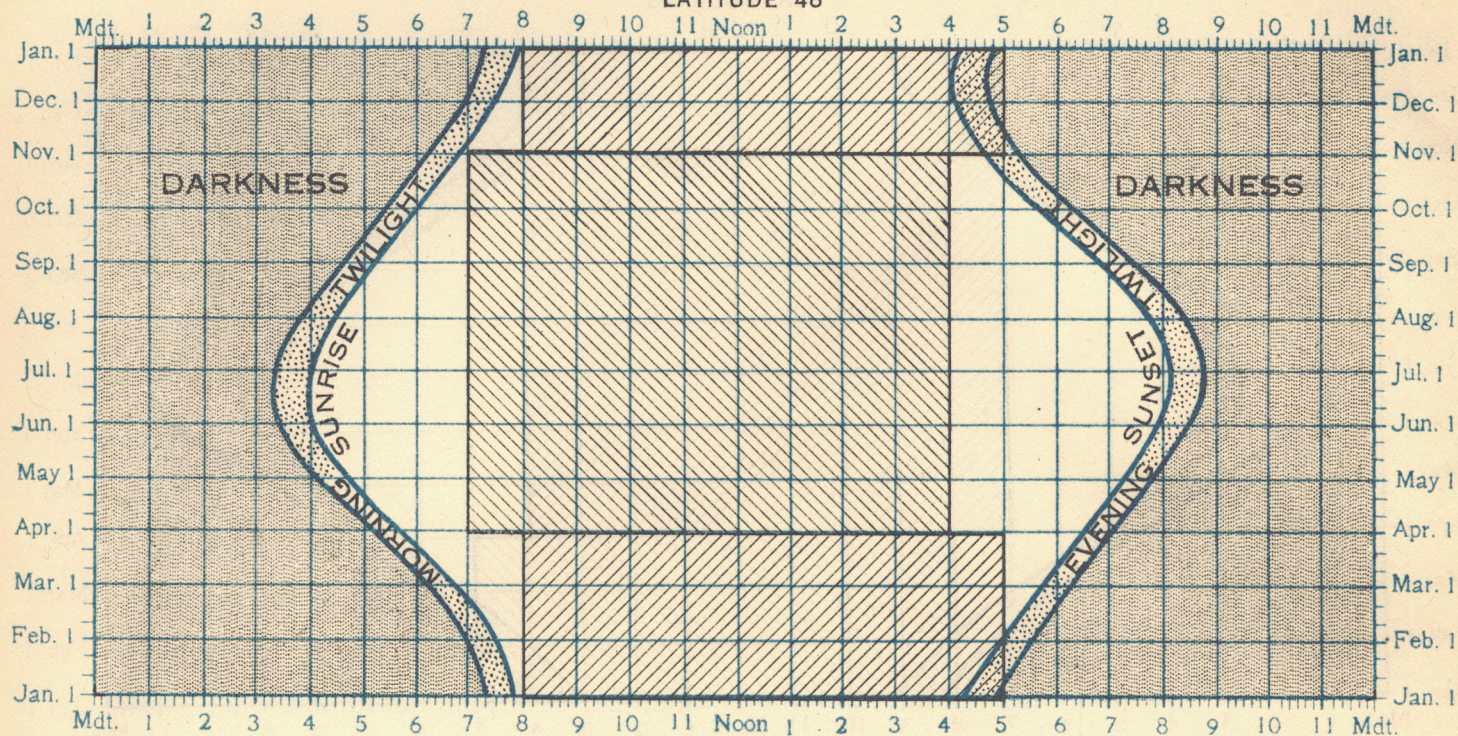
American and European regions on parallel 60° N.: Southern Alaska, Hudson Bay; Cape Farewell, Shetlands, Kristiana, Petrograd.

LATITUDE 54°

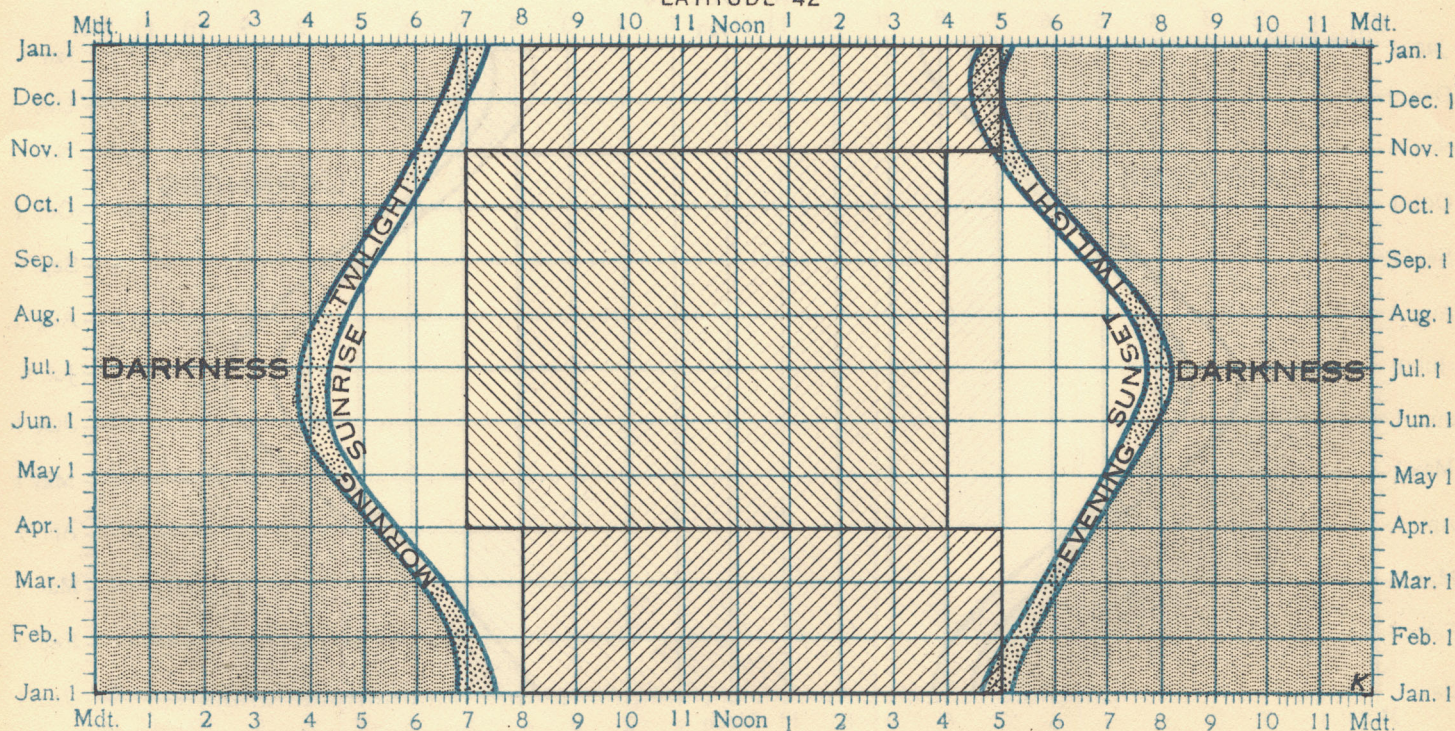


American and European regions on parallel 54° N.: British Columbia to southern Hudson Bay, Labrador; British Isles, Denmark, Moscow, etc.

DAYLIGHT AND DARKNESS DIAGRAMS

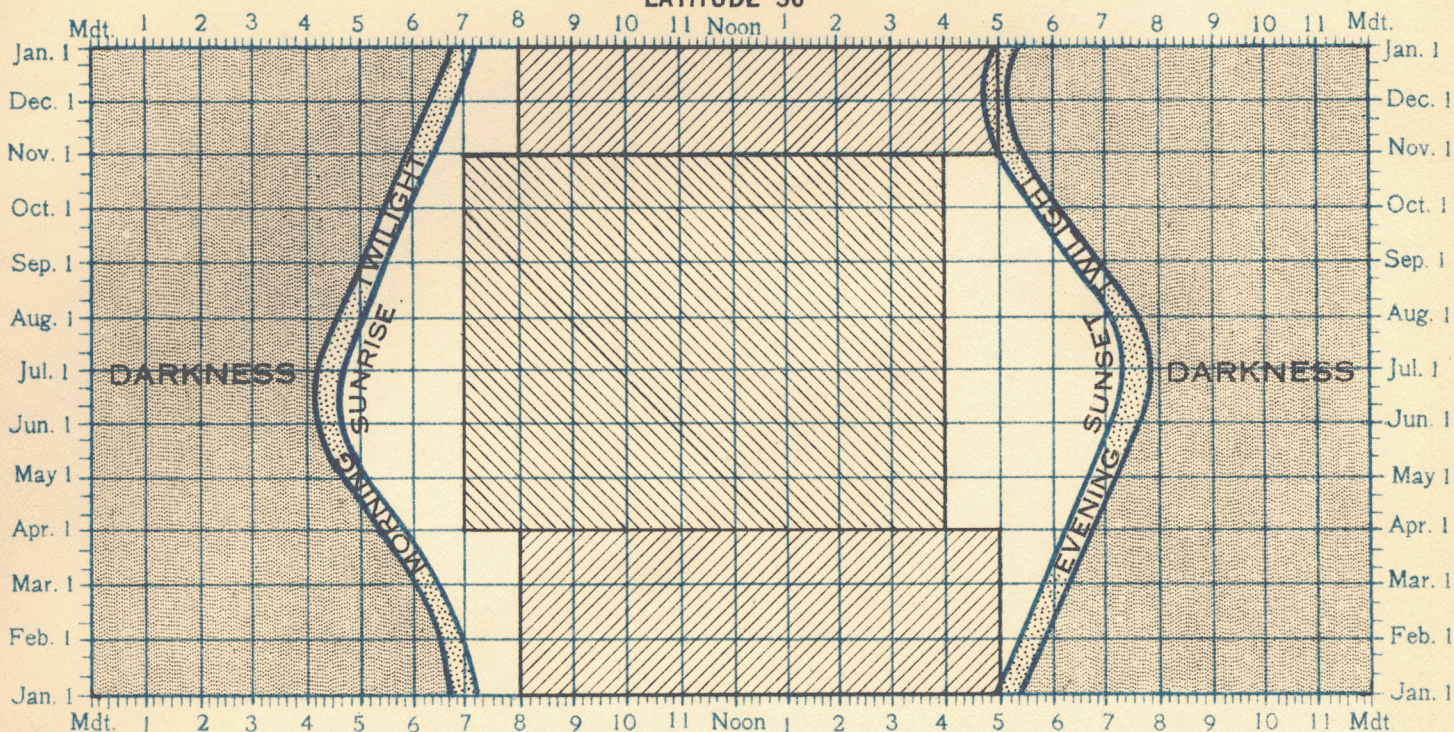
LATITUDE 48° 

American and European regions on parallel 48° N.: Northern boundary of the United States, Newfoundland; northern France, Bavaria, Austria-Hungary.

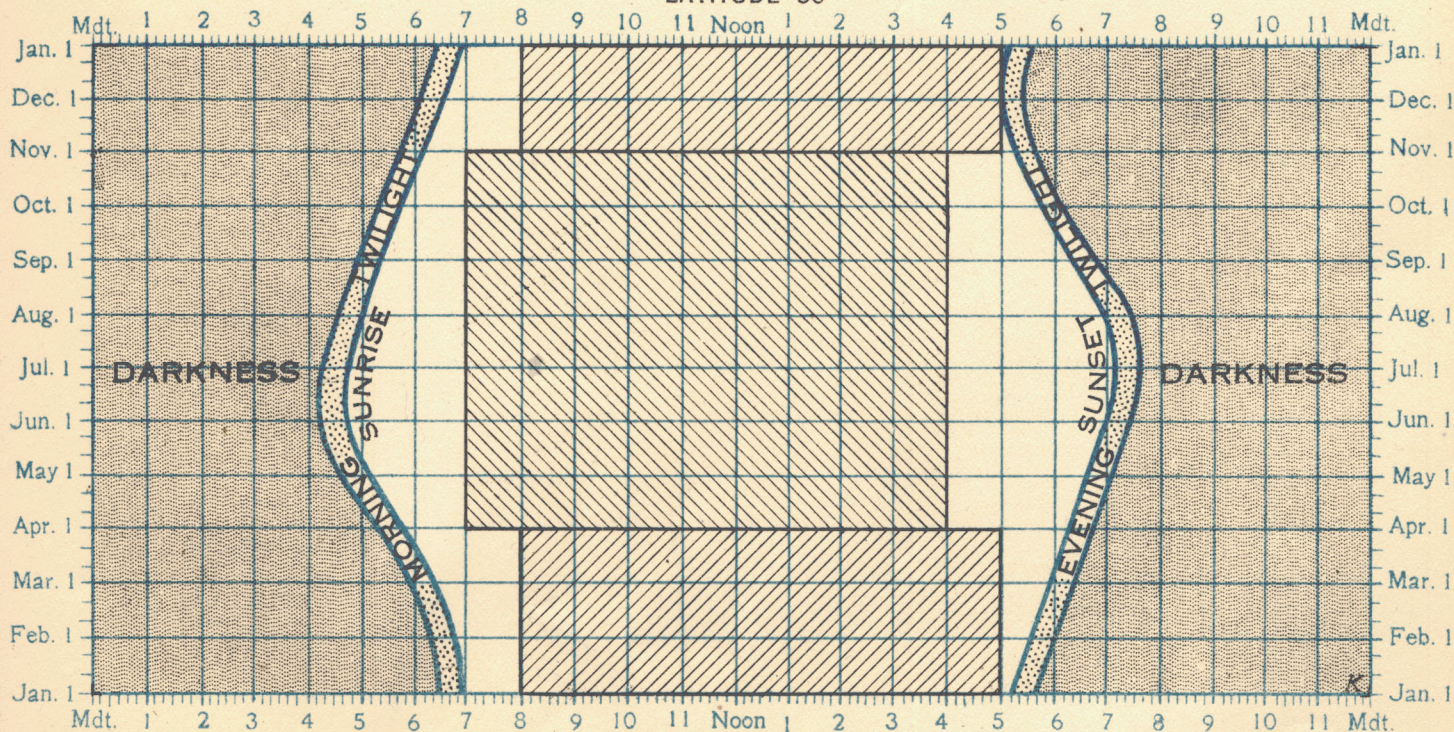
LATITUDE 42° 

American and European regions on parallel 42° N.: Oregon, Nebraska, Lake Erie, Connecticut; southern France Italy, the Balkans.

DAYLIGHT AND DARKNESS DIAGRAMS

LATITUDE 36° 

American and European regions on parallel 36° N.: California, Oklahoma, Tennessee, North Carolina; Azores, Spain, Greece, etc.

LATITUDE 30° 

American and European regions on parallel 30° N.: Lower California, Southern Texas, Louisiana, Northern Florida; Madeira, Morocco, etc.